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about 10 carbon atoms as BF_3 catalyst modifier, which is different from carboxylic acid anhydride. Thus, Applicant's invention is not anticipated by the Akatsu et al patent. Therefore, withdrawal of the Examiner's anticipation rejection is respectfully requested.

§ 103 Rejection of claims 1-9 over U.S. 5,929,297 in view of U.S. 4,045,507

Claims 1-9 are rejected under 35 USC § 103 as being unpatentable over U.S. 5,929,297 to Theriot et al in view of U.S. 4,045,507 to Cupples et al. This rejection is respectfully traversed. Reconsideration and withdrawal of the rejections are respectfully requested.

The Theriot et al patent discloses a modified, promoted BF_3 catalyst which is used to catalyze the oligomerization of olefins. See column 1, lines 9-12. The promoter is a protic promoter. See column 4, lines 37-38. Carboxylic acids are listed among a lengthy laundry list of various compounds of possible protic promoters, but the patent indicates that the preferred compounds are tertiary amines, such as triethylamine. See column 4, lines 40-49. The modifier is specifically identified as being a nitrogen compound having at least one moiety in which a carbonyl group is directly bonded to the nitrogen atom. See column 2, lines 59-61.

The Cupples et al patent discloses the use in the oligomerization of alpha olefins of a boron trifluoride catalyst promoted by a carboxylic acid catalyst which may be used in conjunction with an alcohol.

carboxylic acid. SEE col. 3 lines 37-43

It is respectfully suggested that the teachings of the two references are not combinable to arrive at Applicant's claimed invention. In the Theriot et al patent, a carboxylic acid and alcohol may be used as a protic promoter; but, on the other hand, Applicant's claimed catalyst system uses alcohol as a protic promoter and a carboxylic acid as a modifier. The Cupples et al patent teaches that the carboxylic acid is complexed with boron trifluoride, which is more like the protic promoter taught by the Theriot et al patent. In the Applicant's claimed invention, the carboxylic acid is used as a modifier of a boron trifluoride that is promoted with an alcohol. Since,

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Applicant's catalyst uses a carboxylic acid as a modifier of an alcohol promoted BF_3 , it is different from any combination of the catalyst systems taught by the Theriot et al and Cupples et al references. Thus, Applicants respectfully suggest that their claimed invention is unobvious over the cited references; and, therefore, request the withdrawal of the Examiner's obviousness rejection.

CONCLUSION

In view of the above comments, it is clear that the claims pending in this application are patentable over the prior art. Early allowance of claims 1-9 is hereby respectfully requested.

Respectfully submitted,

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| CERTIFICATE OF ACADEMIC | |
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| I hereby certify that the following is a true and correct copy of the original as filed with the Registrar. | |
| Examiner T. Nguyen on the date indicated below: | |
| <u>2-14-02</u> | |
| (Date) | |
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